

C. Remarks

The claims are 1-3, with claim 1 being the sole independent claim. Claim 5 has been cancelled without prejudice or disclaimer. Claim 1 has been amended to clarify the invention. Support for this amendment may be found, *inter alia*, in the specification at page 21, line 24, to page 22, line 7. Claims 2 and 3 have been amended to reflect the changes made in claim 1. No new matter has been added. Reconsideration of the claims is expressly requested.

Claims 1-3 stand rejected under 35 U.S.C. § 103(a) as being allegedly obvious from U.S. Patent No. 4,825,249 (Oki) in view of U.S. Patent No. 3,387,071 (Cahill). Claim 5 stands rejected under 35 U.S.C. § 103(a) as being allegedly obvious from Oki in view of Cahill and further in view of U.S. Patent No. 4,980,108 (Suzuki). The grounds of rejection are respectfully traversed.

Prior to addressing the merits of rejection, Applicants would like to briefly discuss some of the features and advantages of the presently claimed invention. That invention, in pertinent part, is related to a process for producing a cleaning blade. In this process, a urethane blade is first dried to limit the water content of the urethane resin to 1% by weight or less. Then, at least a portion of the blade is impregnated with an isocyanate compound. After the impregnation, warm or hot air at a temperature not lower than the melting point of the isocyanate compound is blown on the blade surface to remove the isocyanate compound remaining on the surface. The urethane resin that forms the blade is allowed to react with the isocyanate compound to form a cured layer. As result of this

process, the prior art problems associated with the friction of a urethane resin blade are resolved.

Since the urethane resin has hydrophilic groups, it tends to absorb moisture from the air and has a water content of more than 1% by weight. However, if the urethane resin contains this much water, the isocyanate compound reacts with the water to generate foam, which makes the blade surface uneven (page 21, line 24 -page 22, line 2). In addition, water inhibits the reaction of the isocyanate compound and the urethane resin. Therefore, in the present invention, the urethane resin is dried before the isocyanate impregnation takes place in order to reduce the water content.

Oki discloses a cleaning blade for use with a photoelectronic copying machine, comprising a urethane substrate coated with a specific perfluoropolyether, which may have an isocyanate at one of its ends. As noted by the Examiner, Oki teaches applying the perfluoropolyether by dipping. However, Oki does not disclose or suggest drying the urethane substrate before the perfluoropolyether is applied to reduce the water content to 1% by weight or less.

The Examiner has alleged that since Oki is silent with respect to the water content, it teaches that the urethane blade contains no water. Applicants respectfully submit that this is incorrect.

As discussed above, urethane resin inherently absorbs moisture from the atmosphere by virtue of having hydrophilic groups. Since Oki does not disclose protecting the urethane resin from atmospheric moisture, the water content of the urethane resin in Oki is not inherently as presently claimed. In fact, the water content is likely more than 1%

by weight. This is clearly demonstrated by Comparative Example 1 in the present application.

Specifically, in Comparative Example 1, a urethane blade was not dried prior to being immersed into the isocyanate bath. As a result, the urethane resin had a water content from 1.5 to 2.1 % by weight. However, in Example 1, when the same blade was dried prior to being immersed in the bath, the water content was only 0.6-0.8 % by weight. The blade in Comparative Example 1 was found to have inferior properties to that in Example 1 (Table 1). Thus, clearly, Oki does not disclose or suggest drying the blade before impregnation takes place to reduce the water content to 1 % by weight or less.

The Examiner has alleged that Limerkens teaches the presently claimed water content. As pointed out previously by Applicants, this is clearly incorrect.

Limerkens is directed to microcellular elastomers, such as shoe soles. The water content ratio in Limerkens is based on the weight of the entire reaction system (col. 3, lines 65 - col. 4, line 4). The water content in claim 1 is based on the weight of the urethane resin *per se*. Thus, the water content recited in Limerkens is different in kind from that presently claimed.

Specifically, the water in the reactive system in Limerkens is used as a foaming agent, in the absence of other blowing agents, to control the urethane density. To the contrary, the small amount of water that may be present in the urethane resin in accordance with the present invention is kept to a minimum to avoid foaming, which can make the blade surface uneven (page 21, line 24 - page 22, line 7). Clearly, there is no reason to look to the disclosure in Limerkens directed to water content used to foam

polyurethane when preparing a urethane blade. Furthermore, even if assumed, *arguendo*, that Limerkens discloses the claimed water content, Limerkens does not disclose or suggest that this water content should be achieved before the isocyanate is applied, as claimed, via a drying step.

Cahill cannot cure the deficiencies of Oki and Limerkens. Cahill is directed to modified urethane fibers. Specifically, Cahill teaches how to modify urethane fibers to improve their heat resistance, toxic properties and elasticity (col. 1, lines 43-56). Cahill, however, also does not disclose or suggest at least steps (1) and (2) of the presently claimed invention.

Lastly, Suzuki also cannot supplement the missing teachings of the above-discussed references. Suzuki is directed to a method of forming a polyurethane coating on a biaxially oriented polyester film. Like the other references, Suzuki fails to disclose or suggest impregnation of urethane with an isocyanate to form a cleaning blade as presently claimed and drying the blade before the impregnation to limit the water content.

In conclusion, Applicants respectfully submit that whether considered separately or in any combination, the documents of record fail to disclose or suggest the presently claimed elements. Wherefore, withdrawal of the outstanding rejections and passage of the application to issue are respectfully requested.

This Amendment After Final Rejection should be entered because it places the case in allowable form. The changes in claim 1 are made for clarification and do not require a new search. Alternatively, it places the case in a better form for a possible appeal.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

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